

RENÉ A. CALDENTÉY

Leonard N. Stern School of Business, New York University
Department of Information, Operations and Management Science
Professor and Group Head, Operations Management Group
George and Edythe Heyman Faculty Fellow

Contact Information

Address: 44 West Fourth Street, Suite 8-77, New York, NY 10012

Phone: (212) 998-0298, Fax (212) 995-4227

Email: rcaldent@stern.nyu.edu

Webpage: <http://www.stern.nyu.edu/~rcaldent/>

Appointments

- Professor. Stern School of Business, New York University. 2014-present.
- Associate Professor. Stern School of Business, New York University. 2007-2014.
- Visiting Faculty.
 - Chicago Booth, University of Chicago, 2014-2015.
 - INSEAD and HEC, Paris, France 2010-2011.
 - Department of Industrial Engineering, University of Chile, Chile, 2007-2008
- Assistant Professor.
 - Stern School of Business, New York University. 2001-2007.
 - Department of Industrial Engineering, University of Chile. 1995-1996.
- Research Analyst. Department of Foreign Trade. Chilean Central Bank. 1995.

Education

Massachusetts Institute of Technology, Cambridge, MA September 1997 to
-*Degree*: Ph.D. in Operations Management May 2001

-*Thesis*: Analyzing the Make-to-Stock Queue in the
Supply Chain and eBusiness Settings

-*Advisor*: Lawrence M. Wein

University of Chile, Santiago, Chile March 1988 to
-*Degree*: Civil Industrial Engineer (Maximum Distinction) November 1994

-*Thesis*: Políticas de Precio para Bienes Percibiles

-*Advisor*: Susana Mondschein

Research Interests

- Revenue Management and Dynamic Pricing.
- Operations Management in the Retail Industry.
- Stochastic Models in Manufacturing and Service Systems.
- The Role of Financial Markets in Operations.
- Production Systems in the Copper Industry.
- Market Microstructure.

Peer-Reviewed Publications and Forthcoming Papers

- Hu, Xing, R. Caldentey, G. Vulcano (2013). Revenue Sharing in Airline Alliances. *Management Science*, **59**(5), 1177-1195.
- Caldentey, R., X. Chen (2011). The Role of Financial Services in Procurement Contracts. In *Handbook of Integrated Risk Management in Global Supply Chains*, co-edited by Panos Kouvelis, Onur Boyabatli, Lingxiu Dong, and Rong Li, John Wiley & Sons, Inc.
- Araman, V., R. Caldentey (2010). Revenue Management with Incomplete Demand Information. *Encyclopedia of Operations Research*, Wiley.
- Caldentey, R., E. Stacchetti (2010). Insider Trading with Random Deadline. *Econometrica* **78**(1), 245-283.
- Caldentey, R., E. Kaplan, G. Weiss (2009). FCFS Infinite Bipartite Matching of Servers and Customers. *Advances in Applied Probability*, **41**, 695-730.
- Araman, V., R. Caldentey (2009). Dynamic Pricing for Non-Perishable Products with Demand Learning. *Operations Research* **57**(5), 1169-1188.
- Caldentey, R., M. Haugh (2009). Supply Contracts with Financial Hedging. *Operations Research* **57**, 47-65.
- Caldentey, R., G. Vulcano (2007). Online Auction and Revenue Management. *Management Science* vol. **53**(5), 795-813.
- Caldentey, R., L. Wein (2006). Revenue Management of a Make-to-Stock Queue. *Operations Research* **54**, 859-875. This paper was awarded the second prize in the *M&SOM Student Paper Competition* (2001).
- Caldentey, R., M. Haugh (2006). Optimal Control and Hedging of Operations in the Presence of Financial Markets. *Mathematics of Operations Research* vol. **31**, 285-304.
- Bitran, G., R. Caldentey (2003). An Overview of Pricing Models and Revenue Management. *M&SOM* vol. **5**, 203-229.
- Caldentey, R., L. Wein (2003). Analysis of a Decentralized Production-Inventory System. *M&SOM* vol. **5**, 1-17.
- Caldentey, R., S. Mondschein (2003). Policy Model for Pollution Control in the Copper Industry, Including a Model for the Sulfuric Acid Market. *Operations Research* vol. **51**, 1-16.

- Bitran, G., R. Caldentey (2002). Two-Class Priority Queueing System with State-Dependent Arrivals. *Queueing Systems* vol. **40**, 355-382.
- Caldentey, R. (2001). Approximations for Multi-Class Departure Processes. *Queueing Systems* vol. **38**, 205-212.
- Caldentey, R., S. Mondschein (2000). Control de la Contaminación Atmosférica de las Fundiciones Estatales de Cobre Mediante un Sistema de Apoyo a las Decisiones. *Rev. Ing. Syst.*, vol. **XIV**, 79-101. (In Spanish)
- Bitran, G., R. Caldentey, S. Mondschein (1998). Coordinating Clearance Markdown Sales of Seasonal Products in Retail Chains. *Operations Research* vol. **46**, 609-624.

Other Publications and Technical Reports

- Ronnqvist, M. F. Bernstein, R. Caldentey, S. D'Amours. (2012). Special issue on supply chain management and collaborative logistics. *Intl. Trans. in Op. Res.* **19**, 631-632.
- Caldentey, R., J.C. Ferrer, I. Haddad, G. Parada, D. Pérez, R. Vial. (2003). *Políticas Dinámicas de Precio y Revenue Management en Falabella*. Technical Report. University of Chile. (In Spanish)
- Caldentey, R., L. Wein (2002). Revenue Management of a Make-to-Stock Queue. *M&SOM* **4**, 4-6.
- Caldentey, R. (2001). *Analyzing the Make-to-Stock Queue in the Supply Chain and eBusiness Settings*. Ph.D. Thesis, Sloan School of Management, MIT.
- Bitran, G., R. Caldentey, J.C., Ferrer, V. Tang. (1999) *Value Pricing of IT Services*. Technical Report. Sloan School of Management.
- Caldentey, R. (1995). *Políticas de Precio para Productos Perecibles*. Civil Industrial Engineering Thesis, Department of Industrial Engineering, University of Industrial Engineering Chile. (In Spanish)
- Caldentey, R., E. Jadresic, A. López (1995). Indicadores de Competitividad de Exportaciones y Sustituidores de Importaciones”, Chilean Central Bank Review. (In Spanish)

Papers in Preparation and under Review

- Caldentey, R., I. Y. Liu, Lobel. Dynamic Pricing without Priors. Under review.
- Araman, V., R. Caldentey. Crowdvoting the Timing of New Product Introduction. Under review.
- Caldentey, R., R. Epstein, D. Sauré. Optimal Exploitation of a Nonrenewable Resource. Under review.
- R. Caldentey, P. Oliveira. Dynamic Pricing and Customer Relationships: Learning by Selling. Under review.

- Caldentey R., M. Haugh. A Cournot-Stackelberg Model of Supply Contracts with Financial Hedging. Working paper.
- Bitran, G., R. Caldentey, R. Vial. Pricing Policies for a Family of Products under Demand Correlation. Working paper.
- R. Caldentey, Hu, Xu. Trust and Reciprocity in Business Alliances. Working paper.
- R, Caldentey, E, Stacchetti. Insider Trading with Incomplete Information. In preparation.
- Caldentey R., G. Gallego, Y. Liu. Dynamic Pricing with BuyBacks. In preparation.
- Caldentey R., S. Jagabathula, A. Patel. Incorporating Buyer's Paralysis into the MNL Choice Model. In preparation.
- Caldentey, R., L. Valdés. Operational Models with Risk Hedging Constraints. In preparation.
- Caldentey, R., D. Sauré. Network Exploitation of a Nonrenewable Resource. In preparation.
- Caldentey, R., F. Ordoñez. Robust Network Revenue Management. In preparation.
- Caldentey R., F. Caro. Dynamic Assortment Planning. In preparation.
- Caldentey, R., C. Correa, C. Dai. Optimal Operating Control and Dividend Distribution Policies. In preparation.

Permanent Working Papers

- Caldentey R., A. Torzhkov. (2007). *A Finite-Population Heavy-Traffic Queueing Model with Arrivals Modulated by Observed Delays.*
- Caldentey R., E, Kaplan. (2007). *A Heavy Traffic Approximation for Queues with Restricted Customer-Server Matchings.*
- Caldentey R., M. Mondschein. (2002). *The Rental Problem.*

Honors and Awards

- *Principal Investigator*: Robust Revenue Management. Research supported by Fondecyt, 2010-2012. Budget \$82,350.
- *Principal co-Investigator*: The Role of Information in Insider Trading with Stochastic Valuation. NSF project # 0720815, 2007-2010. Budget \$375,967.
- *Principal Investigator*: The Martingale Approach to Operational and Financial Hedging. Research supported by Fondecyt, 2007-2010. Budget \$70,600.
- Finalist in the JFIG paper competition (M&SOM) with the paper: Online Auction and Revenue Management (co-author: Gustavo Vulcano). INFORMS, Denver 2004.
- Semi-Plenary speaker at "CLAIO 2008", Cartagena de Indias, Colombia 2008.

- Plenary speaker at OPTIMA'07, Puerto Montt, Chile, November 2007.
- Operations Research Meritorious Service Award, 2002 and 2005.
- M&SOM Meritorious Service Award, 2004.
- Second Prize M&SOM Student Paper Competition 2001 with the paper Revenue Management of a Make-to-Stock Queue.
- Derbes, Gerrity, and Zannetos Fellowships 2000-2001. Sloan School of Management, MIT.
- Finalist in the paper Competition "OR in Developing Country" with the paper: Decision Support System for Pollution Control in the Copper Industry, Including a Model for the Sulfuric Acid Market (co-author: Susana Mondschein). IFORS '99, August 1999, Beijing, China.
- "Presidente de la República", Chilean Government Scholarship, 1997-2000.
- Outstanding Teacher Award 1996. Dept. of Industrial Engineering, University of Chile.
- Outstanding Engineer Student 1995. Chilean Institute of Engineers.
- Outstanding Teacher Assistant 1992-1994. Dept. of Industrial Engineering, University of Chile.

Selected Industry Projects

- *Principal Investigator*: Demand Forecast and Capacity Planning. Research supported by FreshDirect (March 2013 to present).
- *Principal co-Investigator*: Dynamic Assortment Planning. Research supported by Falabella (October 2008 to June 2010).
- *Principal co-Investigator*: Decision Support System for Evaluating Long-Term Investments in the Copper Industry. Research supported by Fondef and Codelco. (November 2004 to November 2007).
- *Principal co-Investigator*: Dynamic Pricing and Inventory Replenishment Models. Research supported by Falabella (October 2002 to October 2003).
- *Research Assistant*: Value Pricing of Technology-Intensive Services. Research supported by IBM (March 1999 to June 2000).
- *Research Assistant*: Measuring Quality of Service on the Internet. Research supported by AT&T (November 1997 to December 1998).
- *Principal co-Investigator*: Inventory and Capacity Management for a Seasonal Manufacturer. Research supported by Otto Krauss (March 1996 to March 1997).
- *Research Assistant*: Policy Model for Pollution Control in the Copper Industry, Including a Model for the Sulfuric Acid Market. Research supported by the Chilean Copper Commission (Cochilco) (September 1995 to March 1997).

- *Principal co-Investigator*: Development of Indexes for Measuring Competitiveness of Chilean Exports. Chilean Central Bank (April 1995 to November 1995).

Teaching Experience

- **Stern School of Business, NYU** (July 2001-present)
 - Operations Strategy (Executive MBA, elective).
 - Operations Management (Executive MBA, MBA and Undergraduate, core class).
 - Introduction to Operations Research (MBA elective).
 - Revenue Management and Pricing:
 - * Master in Business Analytics, core course
 - * MBA and Undergraduate, elective
 - Doctoral Courses:
 - * Stochastic Control and Dynamic Programming.
 - * Revenue Management and Dynamic Pricing.
 - * Queueing Networks - Theory and Applications.
 - * Risk Management in Operations.
 - * Advanced Topics in Operations: Multi-Armed Bandits and their Applications.
- **MIT-Zaragoza Logistics Center, Spain** (July, 2012)
 - Summer School Program. Revenue Management and Dynamic Pricing (PhD level).
- **Department of Industrial Engineering, University of Chile** (2007-2008)
 - Operations Management (Undergraduate core).
 - Service Operations (Master level).
- **Universidad Torcuato Di Tella, Argentina** (July, 2006 and December 2007)
 - Core class on Operations Management (MBA level).
- **Marshall School of Business, USC** (May 23-May 27, 2005)
 - Mini Course on Stochastic Control with Applications (Ph.D. level).
- **Sloan School of Management, MIT** (June-July, 2000)
 - *Teaching Assistant*: Data, Models, and Decisions (Executive MBA).
- **Universidad de Guayaquil** (August, 1996)
 - Mini Course on Service Operations. (Executive MBA).
- **Department of Industrial Engineering, University of Chile** (1996-1997)
 - Operations Research and Stochastic Processes (Undergraduate Core).
 - Linear Programming (Undergraduate Core).
 - Operations Management (MBA core).
 - Introduction to Decision Models (MBA elective).
 - Project Management (MBA elective).

Service and Leadership Activities at NYU Stern School of Business

- Group Head Operations Management Group (2010-present)
- Member IOMS Department Executive Committee (2013-present)
- PhD Coordinator Operations Management Program (2010-2014)
- Academic Director Master in Global Innovation (2011-2013)
- Member of the Specializations & Minors Committee (2011-2014)
- Member of Stern Undergraduate Curriculum Taskforce Committee (2011-2012)
- Member of Stern Langone Curriculum Taskforce Committee (2013-2014)
- Member P&T Committee OM group.
- PhD Thesis Supervision: Andrey Torzhkov, Xing Hu, Ying Liu, Jigar Patel.
- Member of the Thesis Committee: Nikolay Osadichy (OM), Navaporn Surasvadi (OM), Vladimir Kovtun (Stat)
- Thesis Advisor Undergraduate Honors Program: Anisha Patel.
- Other Activities: Coordinator OM proficiency exam (2003-2007), regular member OM faculty and PhD recruiting committees, speaker MBA preterm and PhD open house, reviewer core OM class at the New York University in London center (NYUL).

Editorial and Service Activities outside NYU

- ASSOCIATE EDITOR: *Operations Research* (2014 -), *Manufacturing & Service Operations Management* (2008-present), *Management Science* (2005-2008), *Revista de Ingeniería de Sistemas* (1995-1996).
- SENIOR EDITOR: *POM* (2006-present).
- EDITORIAL BOARD: *Manufacturing & Service Operations Management* (2003-2005).
Revista ICHIO.
- CO-DIRECTOR: Center for Retailing Studies (CERET), University of Chile (2008-2010).
- CHAIR:
 - * iFORM SIG, M&SOM, 2011-2012.
 - * Operations Management/Finance Interface Track, POM, Reno Nevada, 2011.
 - * Applied Probability Cluster, INFORMS Austin, 2010.
 - * Revenue Management Section Prize 2009.
 - * Revenue Management and Dynamic Pricing Cluster, INFORMS Atlanta, 2003.
 - * Workshop on Operations and Management Science, Santiago, Chile, 2005.
- COUNCIL MEMBER: Applied Probability Society (2009-2011).

- COMMITTEE MEMBER: Revenue Management Section Prize 2008.
- JUDGE: Nicholson Prize 2008 and 2009. M&SOM Student Paper Award Competition, 2004, 2005, 2008, 2009, 2010.
- REFEREE FOR: European Journal of Operations Research, Games and Economic Behavior, Journal of Applied Probability, Journal of Economic Theory, Management Science, M&SOM, Naval Research Logistics, Operations Research, Operations Research Letters, POM, Probability in the Engineering and Information Sciences, Mathematics of Operations Research.
- MEMBER: INFORMS, Revenue Management and Pricing Section, Applied Probability Society.

Selected Invited Seminars

- Stanford, GSB, November 2013.
- Chicago, Booth, November 2013.
- The Wharton School of the University of Pennsylvania, October 2013.
- Kellogg, Northwestern University, November 2012.
- MIT-Zaragoza Logistics Center, Zaragoza, Spain, July 2012.
- Columbia Business School, May 2012.
- Georgetown, April 2012.
- HEC, Paris, France, March 2012.
- Sloan School of Management, MIT, December 2011.
- Haas School of Business, Berkeley University, December 2011.
- Tsinghua University, China, June 2011.
- IE, Spain, July 2011.
- MIT-Zaragoza Logistic Center, July 2011.
- CORE, Louvain-la-Neuve, Belgium, April 2011.
- European Business School, Germany, March 2011.
- London Business School, September 2010.
- INSEAD, March 2010.
- UNC, March 2010.
- Tepper School of Business, CMU, Pittsburgh, March 2010.
- UT Dallas, February 2010.
- University of Virginia. October 2009.
- Syracuse University. September 2009.
- NYU, 9th Annual NYU/KPMG Tax Lecture on Tax Efficient Supply Chain. April 2009.
- Columbia Business School. April 2009.
- The Wharton School of the University of Pennsylvania. April 2008.
- The Anderson School of Management, UCLA. April 2008.
- Case Western University. April 2008.
- School of Operations Research and Industrial Engineering, Cornell University, Feb 2007.
- Robert H. Smith School of Business, University of Maryland, Maryland, February 2007.
- Operations Research Center, MIT, February 2007.

- Marshall School of Business, USC, Los Angeles CA, October 2006.
- Industrial and Systems Engineering, Lehigh University, September 2006.
- Universidad Torcuato Di Tella, Buenos Aires, Argentina, July 2006.
- Universidad Adolfo Ibañez, Santiago, Chile, June 2006.
- MEDS Department, Kellogg, Northwestern University, October 2005.
- Department of Decision Sciences, Fuqua , Duke University, October 2005.
- Department of Mechanical Engineering, University of Minnesota, December 2004.
- Robert H. Smith School of Business, University of Maryland, Maryland, December 2004.
- School of Business, University of Miami, Miami, December 2004.
- Sloan School of Management, MIT, Cambridge, November 2004.
- Tepper School of Business, CMU, Pittsburgh, November 2004.
- Marshall School of Business, USC, Los Angeles CA, October 2004.
- Universidad Torcuato Di Tella, Buenos Aires, Argentina, August 2004.
- Universidad de Buenos Aires, Facultad de Ciencias Exactas, Argentina, August 2004.
- Universidad de Chile, Facultad de Matemáticas, Santiago, Chile, August 2004.
- Yale School of Management, Yale University. January 2001.
- MEDS Department, Kellogg, Northwestern University, January 2001.
- Columbia University Graduate School of Business. February 2001.
- Tepper School of Business, CMU, Pittsburgh, February 2001.
- Stephen M. Ross School of Business, University of Michigan. February 2001.
- IOE Department, University of Michigan. February 2001.
- IEMS, Northwestern University, February 2001.
- School of Industrial Engineering, Purdue University. February 2001.
- INSEAD. March 2001.

Selected Conference Presentations

- *Inventory Models with Risk Constraints*, INFORMS, San Francisco, 2014.
- *Dynamic Pricing without Priors*, INFORMS Revenue Management and Pricing conference, Atlanta, 2013.
- *Dynamic Pricing and Inventory Strategies with Demand Learning*, INFORMS, Phoenix, 2012.
- *Dynamic Pricing without Priors*, INFORMS, Phoenix, 2012.
- *Optimal Timing of New Product Introduction using Preliminary Market Testing*, INFORMS, Phoenix, 2012.
- *Collaborative Revenue Management through Trading Favors*, INFORMS, Charlotte, 2011.
- *Dynamic Pricing and Advance Selling under Demand Learning*, INFORMS, Charlotte, 2011.
- *Optimal Operating Control and Dividend Distribution Policies*, INFORMS, Charlotte, 2011.
- *Optimal Operating Control and Dividend Distribution Policies*: POMS, Vancouver 2010, INFORMS, San Diego 2009.

- *Dynamic Pricing and Customer Relationships: Selling to Learn or Learning to Sell?*, INFORMS, San Diego 2009.
- *Revenue Management*, Semi-Plenary speaker at "CLAIO 2008", Cartagena de Indias, Colombia 2008.
- *Dynamic Assortment Planning*: POMS, Vancouver 2010, INFORMS, Washington 2008, Seattle 2007
- *Operational Models with Risk Hedging Constraints*, Washington 2008.
- *Revenue Management*. Plenary talk at OPTIMA'07, Puerto Montt, Chile, November 2007.
- *Optimal Exploitation of a Mineral Resource*. INFORMS, Seattle 2007.
- *Sequential Pricing and Demand Learning*. INFORMS, Seattle 2007.
- *Hedging Operational Risk Using Financial Markets*. Integrated Finance and Operations Management Workshop. Carnegie Mellon Tepper School of Business, August 2006.
- *Dynamic Pricing for Non-Perishable Products with Demand Learning*. DIMACS Workshop on Yield Management and Dynamic Pricing, Rutgers University, August 2005.
- *The Martingale Approach to Operational and Financial Hedging*. Mini-Conference on Integrated Risk Management in Operations and Global Supply Chain Management. Boeing Center on Technology, Information and Manufacturing at Olin School of Business, Washington University-St.Louis. June 2005.
- *Financial Hedging in the Supply Chain*. INFORMS, Denver 2004.
- *Pricing Policies for a Family of Products under Demand Correlation*. INFORMS, Denver 2004.
- *Operational and Financial Hedging: A Coherent Approach*. Mini-Conference on Integrated Risk Management in Operations and Global Supply Chain Management. Boeing Center on Technology, Information and Manufacturing at Olin School of Business, Washington University-St.Louis. June 2004.
- *Dynamic Pricing Under Competition*. INFORMS, Atlanta, 2003.
- *Dynamic Pricing and Demand Learning*. EURO-INFORMS, Istanbul, Turkey, 2003.
- *A Heavy Traffic Approximation for Queues with Restricted Customer-Server Matchings*. INFORMS, San José, 2002.
- *A Real Option Approach for Valuating Long-term Planning in the Mining Industry*. INFORMS, San José, 2002.
- *A Real Option Approach for Valuating Long-term Planning in the Mining Industry*. POMS, Savanna, Georgia, 2003.
- *Revenue Management of a Make to-Stock Queue*. VI Congrès Franco-Chilien de Mathématiques Appliquées. Centro de Matemáticas Aplicadas, Universidad de Chile, Santiago 2001.
- *Revenue Management of a Production Facility Operating in an Electronic Marketplace*. INFORMS, San Antonio, 2000.
- *Decision Support System for Pollution Control in the Copper Industry, Including a Model for the Sulfuric Acid Market*. IFORS '99, Beijing, China, 1999.
- *Coordinating Pricing Policies of Seasonal Products In Retail Chains*. INFORMS, Dallas, 1997.